



**POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT**

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
IL 3890008946

II. SITE NAME AND LOCATION

01 SITE NAME (proper, common, or descriptive name of site) Argonne National Laboratory-Illinois (ANL-IL) Building 34, Liquids Waste Treatment		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 9700 South Cass Avenue		
03 CITY Argonne	04 STATE IL	05 ZIP CODE 60439	06 COUNTY DuPage	07 COUNTY CODE 043
08 COORDINATES LATITUDE 41° 42' 46.0"		LONGITUDE 87° 57' 54.0"		

10 DIRECTIONS TO SITE (starting from nearest public road) From I-55, exit Cass Ave. south. Turn west on Northgate Road and enter ANL-IL facility. Follow Outer Circle Road to the southeast. Turn east on Eastwood Drive, continue on Eastwood Extension. Building 34 was located between Tech Road and Center Road about 200 ft. south of Eastwood Extension Road.

III. RESPONSIBLE PARTIES

01 OWNER (if known) U.S. Department of Energy (DOE-CH)		02 STREET (business, mailing, residential) 9800 South Cass Avenue		
03 CITY Argonne	04 STATE IL	05 ZIP CODE 60439	06 TELEPHONE NUMBER (312) 972-2271	
07 OPERATOR (if known and different from owner) Argonne National Laboratory		08 STREET (business, mailing, residential) 9700 South Cass Avenue		
09 CITY Argonne	10 STATE IL	11 ZIP CODE 60439	12 TELEPHONE NUMBER (312) 972-3998	Aubrey Smith Envir. Compliance Officer
13 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A. PRIVATE <input checked="" type="checkbox"/> B. FEDERAL <u>DOE-CH</u> <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER _____ (Specify) <input type="checkbox"/> G. UNKNOWN				

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A RCRA 3001 DATE RECEIVED: _____ MONTH DAY YEAR ☐ B UNCONTROLLED WASTE SITE (RCRA 103) DATE RECEIVED: _____ MONTH DAY YEAR ☒ C NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE <u>11, 4, 85</u> <input type="checkbox"/> NO MONTH DAY YEAR		02 BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input checked="" type="checkbox"/> F. OTHER <u>DOE Environmental Survey</u> (Specify)		
03 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input checked="" type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		04 YEARS OF OPERATION BEGINNING YEAR <u>1950</u> ENDING YEAR <u>1977</u> <input type="checkbox"/> UNKNOWN		

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Building 34 contained three tanks which were used to neutralize liquid mixed wastes (hazardous and radioactive liquids). Some of the substances placed in the tanks included uranium, sodium cyanide, chromium, and nitric acid.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

There was a potential for groundwater contamination.

EPA Region 5 Records Ctr.



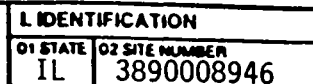
341937

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Stress Information and Part 3 - Description of Hazardous Conditions and Activities)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspection on time available basis) ☒ D. NONE (No further action needed; complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT Barry Fritz	02 OF (Agency/ Organization) DOE-CH, Operational & Envir. Safety Division		03 TELEPHONE NUMBER (312) 972-2271
04 PERSON RESPONSIBLE FOR ASSESSMENT C. L. Cheever	05 AGENCY DOE	06 ORGANIZATION ANL-IL	07 TELEPHONE NUMBER (312) 972-3311
			08 DATE <u>04, 07, 88</u> MONTH DAY YEAR



03 WASTE CHARACTERISTICS (Check all that apply)

<input checked="" type="checkbox"/> A TOXIC	<input type="checkbox"/> E SOLUBLE	<input type="checkbox"/> I HIGHLY VOLATILE
<input checked="" type="checkbox"/> B CORROSIVE	<input type="checkbox"/> F INFECTIOUS	<input type="checkbox"/> J EXPLOSIVE
<input checked="" type="checkbox"/> C RADIOACTIVE	<input type="checkbox"/> G FLAMMABLE	<input type="checkbox"/> K REACTIVE
<input type="checkbox"/> D PERSISTENT	<input type="checkbox"/> H IGNITABLE	<input type="checkbox"/> L INCOMPATIBLE
		<input type="checkbox"/> M NOT APPLICABLE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OLY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	3000	Gallons	Sodium Cyanide
ACD	ACIDS	9000	Gallons	Nitric Acid, Pickling Solutions
BAS	BASES			
MES	HEAVY METALS			

[illegible]

CATEGORY	O1 FEEDSTOCK NAME	O2 CAS NUMBER	CATEGORY	O1 FEEDSTOCK NAME	O2 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

(2) Phase I CERCLA Program, ANL-IL Installation Assessment Report (required by DOE Order 5408.14) July 1986, p. 23.

(3) 1988 Inventory of Federal Hazardous Waste Activities (for ANL-IL).

(22) Decontamination and Decommissioning of the Argonne National Laboratory East Area Radioactively Contaminated Surplus Facilities, Final Report (Report #ANL-87-18) by W. H. Kline, H. J. Moe, and G. F. Fassnacht; July 1987, p. 20-23, 67-85, 99.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL	3890008946

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 45,000 04 NARRATIVE DESCRIPTION

SEE ATTACHED

01 ☐ B SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ C CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

01 ☐ D FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

01 ☐ E DIRECT CONTACT 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

01 ☒ F CONTAMINATION OF SOIL 02 ☒ OBSERVED (DATE 9-85) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED 1 04 NARRATIVE DESCRIPTION

During the decontamination and decommissioning of the building, soil surrounding the tanks was found to be contaminated with radioactivity. The contaminated soil was removed, packaged in M-3A steel bins, and shipped to the Radioactive Waste Management Center in Idaho for disposal.

01 ☒ G DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 45,000 04 NARRATIVE DESCRIPTION

SEE ATTACHED

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

CONTINUATION SHEET

Part 3 Description of Hazardous Conditions and Incidents

ANL-IL

IL 3890008946

Building 34, Liquids Waste Treatment

II 01A Groundwater Contamination

The potential for groundwater contamination exists. Groundwater in parts of the ANL-IL facility is in the perched condition because of the relative impermeability of the underlying silty clay. This clay can restrict downward waterflow and create a lateral perched waterflow condition. The groundwater pattern in the area would probably follow the area topography, flowing south-easterly toward the Des Plaines River. Contaminated water may percolate downward into the perched groundwater and migrate in a southeasterly direction offsite. (Ref. (5), p.2)

Population = 3,000 employees plus 42,000 residents within three miles and north of the Des Plaines River.

II. 01B Drinking Water Contamination

In the vicinity of ANL-IL, only subsurface water (from both shallow and deep aquifers) and Lake Michigan water are used for drinking purposes. The potential for contamination of groundwater used for drinking purposes does exist. Two principal aquifers are used as water supplies in the vicinity of ANL-IL. The upper aquifer is the Niagaran-Alexandrian dolomite, which is about 200-ft. thick in the ANL-IL area and has a piezometric surface between 50 and 100 ft. below the ground surface. The lower aquifer is the Galesville sandstone which lies between 490 and 1500 ft. below the surface. Maquoketa shale separates the aquifers and retards hydraulic connection between the aquifers.

The four domestic water wells now in use at ANL-IL are about 300-ft. deep in the Niagaran dolomite. Two of the wells are located northwest of the site, one is south-southeast of the site, and the other is southwest of the site. The nearest well is approximately 900 ft. south-southeast of the site. Together the four wells serve more than 3000 ANL-IL employees.

(Ref. (1) p. 8,12; Ref. (2) p. 6; Ref. (5) p. 1-2).

Population = 3,000 employees plus 42,000 residents within three miles and north of the Des Plaines River.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
IL 3890008946

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES
(Spills, runoff, standing liquids, leaking drums)

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 45,000

IV. COMMENTS

SEE ATTACHED

V. SOURCES OF INFORMATION (Cite specific references, e.g., State files, sample analysis, reports)

- (1) 1986 Annual Site Environmental Report for Argonne National Laboratory (Report #ANL-87-9) by N. Golchert and T. Duffy.
- (2) Phase I CERCLA Program, ANL-IL Installation Assessment Report (required by DOE order 5480.14), July 1986. (See attached.)

CONTINUATION SHEET

Part 3 Description of Hazardous Conditions and Incidents

ANL-IL

IL 3890008946

Building 34, Liquids Waste Treatment

IV Comments

The Building-34 facility treated mixed wastes. Since radioactivity leaked from the treatment tanks, hazardous substances may also have leaked from the tank. Soil contaminated with radioactivity was removed from the site under the DOE Surplus Facilities Management Program. Any soil contaminated with hazardous substances would have been removed at the same time. The building and equipment in the building were completely decontaminated and decommissioned, and the building has been demolished.

V Sources of Information (Continued)

- (3) 1988 Inventory of Federal Hazardous Waste Activities (for ANL-IL).
- (4) Environmental Assessment Related to the Operation of Argonne National Laboratory (DOE/EA-0181), August 1982.
- (5) ANL-IL Intra-Laboratory Memo; S. Y. Tsai to N. W. Golchert; Subject: Groundwater Monitoring Plan for the 317-319 Area; September 17, 1985.
- (6) Site Plan (ANL-IL Map), January 9, 1986.

Summary Report for Preliminary Assessment of the ANL-IL

Building 34 - Liquids Waste Treatment

4/13/88

Building 34 and its concrete (in the ground) liquid waste treatment tanks was used for neutralization of radioactive acid solutions and for chlorination of cyanide solutions. There was leakage from process lines from adjacent buildings which caused contamination of soil.

The facility was decommissioned under the DOE Surplus Facilities Management Program; the uranium contaminated soil was removed and the facility was demolished.

Recommendation: (1) No further action is recommended unless results of environmental samples taken by the DOE Environmental Sampling Team show remaining contaminants.